

## BACKGROUND

### 1. Field of the Invention

This invention relates generally to purchasing systems via a public computer network system (Internet or World-Wide-Web). While the products sold on the Internet are often real and tangible, the market place exists in a virtual realm. To conduct the business of selling in the virtual realm of the Internet, a virtual transaction had to take place; or so it has been thought. This Invention requires non-virtual transactions that take place at a retail point of sale for a means of virtual merchandising.

### 2. Related Prior Art

Retail industries can exist anywhere. The historical version of retail was the actual retail point of sale. A retailer established a store where customers could visit, look at merchandise and make purchases. The customer had to visit the store in order to purchase the products. Other forms of retailing have existed like local street vendors, door-to-door salesmen, shop-by-telephone, mail order catalogs, infomercial shop-by-telephone, and most recently, the Internet.

To understand the difference between this invention and prior art, one must first be able to understand the differences between retail point of sale and other methods of sale. There is always a time variable involved with merchandising transactions, but one should not make the mistake of assuming that time is the essential element that distinguishes between direct purchases and those on account. The basic formula for establishing a credit account is where the purchase price (P) of a product can be paid at a later time (T), an interest rate (R) can be assessed, and the amount paid (A) =  $P (1 + R)^T$ .

A person may gain extra time to pay for a purchase by using credit, but it is the agreement between parties that one will extend credit to the other that creates a credit account. Time has no meaning in the direct purchase formula (A) = P. For that matter, there is always some lag between the time payment is tendered and possession takes place even if for just split seconds. Sometimes a lag between payment and possession requires a voucher so that the purchaser has some proof that payment has been made. The voucher is usually just a simple sales receipt. Other times it can be a ticket such as for attending a theater or other engagement. The voucher in this case does not represent an account or value of money. The voucher merely represents that the transaction has been completed and the merchandise, whether physical merchandise or simply entertainment, has been authorized.

Retail points of sale transactions involve at least one in-person contact with the buyer. On the Internet, it has always been assumed that this transaction must be conducted virtually on the Internet; after all, the Internet is a virtual realm. With the huge rise in popularity the Internet, there are rising concerns from the public about who should and who should not be able to access certain Internet content such as but not limited to: materials with copyrights such as music, content that is adult in nature, or other restricted access material.

Regulatory authorities and web masters have made attempts to control access through the selling of access rights over the Internet itself. These services are often called subscription based I.D. or age verification services. User names and passwords or other means of secure access have been delivered to consumers after they entered credit card information. This has become an accepted means of control, particularly with Adult Verification systems.

Public Key Infrastructure (PKI) is one method that has evolved into a secure and anonymous means of handling web transactions through the uses of encryption, trusted vendors, and trusted banking institutions. PKI methods of Web transactions involve digital signature and money transactions over the Internet. They require a customer, a bank, a merchant, a public archive such as an Internet web site, Certificate Authorization servers, and encryption and decryption of the data.

Most secure web transactions require cookies and Web delivered applets (such as JAVA). A cookie is information that a Web site puts on an end-users hard disk so that it can use the information at a later time.

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Using the Web's Hypertext Transfer Protocol (HTTP), each request for a Web page is independent of all other requests. For this reason, the Web page server has no memory of what pages it has sent to a user previously or anything about previous visits. A cookie is a mechanism that allows the server to store its own information about a user on the user's own computer. For example, the Internet Explorer browser stores cookies in a Windows subdirectory. Netscape stores cookies as a single text file.

RETAIL POINT OF SALE APPARATUS (RPOS) FOR INTERNET MERCHANDISING is a return to the simplistic approach of pre-Internet ways of doing business, but it is not an obvious approach. As malicious attackers of Internet communications become more common, the Internet security measures become increasingly sophisticated. The RPOS takes away some of the sophistication and uses much simpler yet effective technology in its place. The predefined transaction authorizes access to web content from a place off the web, originates at a real place of business, and is a concept that a trained Internet professional may not be able to grasp immediately; they have been conditioned towards more complicated means of accomplishing the tasks directly on the Internet.

The U.S. Patent and Trademark Commissioner announced that the Agency would be revamping its patent examination guidelines for computer-related inventions and e-commerce practices, see United States Patent and Trademark Office RIN 0651-AB20. RPOS would not negatively affect any electronic commerce as it currently operates. It would primarily be used in conjunction with current methods. A return to a retail establishment for conducting Web business may hold great promise for Internet security in the future. A search of past practices and inventions reveals a great deal of effort spent on avoiding over-the-counter transactions for Internet e-commerce rather than embracing it as does the RPOS technology.

### 3. Prior Art Differentiated

There are three key questions to be asked when attempting to differentiate the technology:

- i. Do they take cash?
- ii. Is there an establishment that acts on behalf of the customer for payment that employs non-virtual (Retail point of sale) to complete the transaction?
- iii. Does the customer have to physically go to the establishment to buy it?

The field of Internet e-commerce has numerous existing patents. A complete search for prior history was not done prior to this filing but a few similar patents were found through a most basic search of the on-line USPTO patent databases. They are reference below to help set the stage for one skilled in the art of Internet commerce to understand the differences between RPOS and previous methods.

This invention is not a Prepaid Internet Access Card, such as used to supply the purchaser of minutes on an Internet Service Providers (ISP) system, see US examples Patent Nos. 5,749,975; 5,987,612; 5,749,075, 5,987,430.

This invention is not merely a method for recording information on a card, computer disk, or other means of recording, see US example Patent No. 6,076,733. The method of recording might be bar code, magnetic tape, smart card, written inscription, or any means of recording information. This invention is not used to locate a specific URL, but is used to divine the predetermined transaction that provided access to a particular URL location.

This invention is not an organizational Internet access security system whereby business organizations control access to web content of their own employees or to others on a closed network or to generate personalized content pages for specific business purposes, see US Patent No. 6,076,166

This invention is not an Internet cash token system used as an anonymous means to get money to spend on the Internet. See US examples Patent Nos. 6,076,078; 6,072,870; 6,061,660; 6,042,149

This invention is not electronic-voucher system, which places a third party URL as the guarantor of funds. See US example 6,058,381.

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This invention is not a mobile Internet media content delivery device in which the device itself carries the content. See US examples Patent Nos. 6,018,720.

This invention is not a means to preview merchandise and set up an account to purchase – as in US Patent No. 5,918,213, where the merchandise merely previewed at the point of sale, but then the transaction is conducted as an off the shelf purchase, through typical Internet methods, or phone-in-sale automated means. The retail point of sale apparatus for Internet Merchandising is a new means for conducting the actual transaction that could be added to such a system.

This invention is not a device for delivering media content through on-line programmable smart card authorization such as used in satellite television programming, or Web TV devices, where a home user of the system can call in on the telephone to order Pay-per-view programming. In these systems the smart card both receives and supplies data to the system over a private network. RPOS does not require programming after the initial over-the-counter transaction.

Although the user of the RPOS may be known, it can also be used completely anonymously.

This invention is much like an event ticket to a movie theater or music concert except that the RPOS is specifically used for access (entrance) to Internet merchandising.

While RPOS can facilitate Secure Web Transactions, it is not a method of the transaction, merely a method of divining the existence of a predetermined web transaction. It does not require a trusted vendor, trusted bank, or buyer authentication. While RPOS may facilitate some of the same types of functions mentioned above, it uses a completely new method.

## BRIEF DESCRIPTION OF THE INVENTION

This invention is essentially retail point of sale for the Internet. In order to best set the stage for a reader of this patent application to best understand the background of this invention and distinguish it from prior art, several descriptive names of the invention are listed below. This is not intended to be an exhaustive list but merely illustrates some of the ways such an invention can be used. After this list, for the remainder of this document, the Invention will be referred to as the RPOS. Although it involves a voucher system, the voucher need not exist in all circumstances. RPOS can use a disk, paper ticket, memory stick, or any other means of supplying an access key and utility program.

### Descriptive Names

1. Internet Content Voucher System
2. Cookie Free Cache Back System Card
3. Prepaid Card for Internet Content Media
4. Web Content Ticket
5. Over-the-counter Internet Sale
6. Simple Anonymity for Internet Content Delivery
7. Face-to-Face Verification System for Divining of Anticipated Internet Transaction
8. Non-Virtual Point of Sale for the Internet
9. Retail Point of Sale Card for Internet Content
10. Internet Authentication Card
11. Internet Adult Verification Card
12. Internet Allocation Card

The RPOS is an “actual point of sale” device for Internet content. Previous waves of invention attempting to satisfy the needs of secure web content on the Internet have delivered many “virtual point of sale” techniques and emphasis has been on the transaction itself and how to exchange money over the Internet.

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Figure 1 illustrates the evolution of a 2D lattice system. The diagrams show a sequence of states from 1 to 11. Each diagram represents a 2D lattice with a central square and four smaller squares. The evolution is shown by the changing positions and orientations of these squares. The diagrams are arranged vertically, showing the progression of the system over time.

In the Industry of Internet publishing, one of the problems has been unauthorized copying, posting, or otherwise revealing of sensitive materials for wide distribution. Millions of dollars in uncollected royalties are lost each year. Publishers have no way of detecting the responsible parties who willfully post the



(more pixels). In other words any single pixel in the original image is recreated as multiple pixels all of the same color. For example a  $320 \times 240 = 76,800$ -pixel image becomes a  $640 \times 480 = 307,200$  pixel image, or roughly four pixels per one pixel of the original image.

Several of the pixels from these new higher resolution images can then be encoded with a BCB by varying the shades within the 4 pixels only slightly – leaving the neutral color of the original larger pixel essentially unchanged. Any documents delivered over the Internet that contain these images are thereby permanently marked.

This re-pixelization creates four available binary codes in the original pixel. The original color is the “0” code and the slightly changed shade is the “1” of the binary. One of the keys to making this system less detectable is to disguise the encoding by causing the encoded jpeg file to still report to the user that it is still a  $320 \times 240$  image when in fact it has been changed to a  $640 \times 480$  image and then report back to the viewing system the proper resolution. If the user resaves the image into a different format such as GIF, the code may or may not be transferred, but as long as images in documents are untouched, the document remains fingerprinted.

### Concealed ASCII

ASCII stands for American Standard Code for Information Interchange. ASCII was developed a long time ago and the characters are not always used in the same way on different computer systems. ASCII was originally designed for teletypes and the first 31 characters in today’s applications are no longer used as originally intended. Concealed ASCII finger printing takes advantage of the fact that several of them act the same as the ASCII character “032” in many applications. ASCII 32 is the code for a blank space.

ASCII characters 0, 10, and 13 do not display anything on most Windows applications. Character 9 will move to a tab, making a long blank space. 16-25 and 27-31 produce a black area on the screen in some applications and a blank area in others. So do 1-9, 11, 12, 14, and 15 on some Windows applications; however, they often cause error messages in the compiler for many applications.

Concealed ASCII can create a BCB by using the standard ASCII 32 in spaces as the “0” character of the binary and an alternate ASCII 0, 10, or 13 with ASCII 32 as the “1” character of the binary.

Example: The quick gray fox jumps over the lazy brown rabbit.

There are nine spaces to use for the BCB in the preceding phrase. The code in the example above reads 010000111. The code for the 2<sup>nd</sup>, 7<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup> spaces in the phrase is ASCII 10 followed by ASCII 32. The remaining spaces simply use ASCII 32. While the concealed ASCII fingerprinting is not printable, it can be used to travel with text of a printable document

Concealed ASCII can easily be lost when transmitted as plain text over the Internet and other systems, but many documents are transmitted over the Internet in specific file formats that would maintain specific ASCII sequences not visible to the reader without looking to the particular codes that generated the text.

### Non-visible or Inaudible Codification

Analog signals of non-discernable frequencies for human ears or eyes are individually dubbed into audio recordings, which can later identify the origin of the recording. The sights or sounds are created using a frequency, signal generator, or other means of creating analog signals. The analog signals, which cannot be heard by humans on the recording, can be used for distribution of copyright materials such as mp3 music or dubbed into the soundtrack of a video that is distributed on the World-Wide-Web (Internet).

Identical songs or videos by the same artist can become individual versions that are licensed to individuals. Using sensitive digital software and computer sound editing tools available from a number of manufacturers the sights and sounds outside the range of human discernment can later be detected to verify

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if the recording is in fact licensed and who is the owner of the license. The analog signals essentially encode any individual identification to a song, video, or other media that contains audio or video tracks.

The human sound range is between 20 and 20,000 hertz for a young person and much less for an old person. The human visual range for light lies within a range around  $10^9$  MHz. Visual analog signals can also be dubbed into digital video recordings. The key to non-visible or Inaudible Codification is merely that that signals are dubbed into the content and not just on the file itself.

#### Content Fingerprinting Usefulness

Fingerprinting documents is a useful and new idea. The usefulness of the specific methods shown here is greatly diminished when patented and the PTO discloses to the public. The actual methods of fingerprinting really should be kept as "Trade Secrets". The above methods are not fool proof or even sophisticated enough to hold up against even the least sophisticated of hackers. They are merely offered here as examples of how to individually license Internet materials. As industry looks to the Internet for delivery of every kind of copyrighted material, there will be other specific methods of fingerprinting. Since, nobody is working on this type of copyright protection, the concept itself might be of strategic advantage. Fingerprinting Internet delivered media may involve documents, images, videos, sound tracks, or any other type of media that can be produced for the Internet.

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## DESCRIPTION OF DRAWINGS

The following drawings provide examples of different applications and construct specifications for the RPOS technology. They are not meant to be inclusive of all uses, they are merely examples.

Figure #1 uses a flow chart to illustrate a use of the RPOS. The process begins with web content dealers who have content posted to a public computer network (Internet) and have chosen to use RPOS for distribution. The web content dealers may manufacture the card themselves or use a third party. The type of security system used for placing the access key on the card is only important as to the particular level of security that is desired. The web content dealer then distributes the ACARD, directly or through distribution channels, to a retail establishment. The retail establishment sells the CARD over the counter to the customer. The dealer, distributor, and retail establishment may use whatever profit margins or price mark-ups as they choose or is agreed upon. The CARD is delivered to the customer like any other retail product. Continuing along the flow chart in Figure #1 to the customer, the CARD is used to access only the web content that is predefined by the CARD. The purpose of the CARD in this transaction is only to ensure that the user is in possession of it. The transaction takes place through an over-the counter sale.

Figure #2 uses a flow chart to illustrate an alternate use of the RPOS, which is the construct specification for claim 3 in this application. The process again begins with Web Content Dealers. In this application the Web Content Dealers may or may not subscribe to the RPOS system (i.e. make their own CARDS). To facilitate the creation of a CARD for the WEB Content Dealers, a retail establishment supplies a computer or terminal as a customer access point, which provides Internet access, and issues a CARD to a customer upon entering the retail establishment. The customer browses the web and looks for content to purchase. Whenever a Web Content Dealer requires some sort of payment and the customer agrees, the customer authorizes payment from the retail establishment and by default the retail establishment agrees to the purchase. The customer is not required to enter his or her own name, credit card payment information, address, or any other information that they do not choose. Upon leaving the establishment, the customer pays the retail establishment the amount required for content received or to be received. The purpose of the CARD in this transaction is only to ensure that the user is in possession of it. The actual transaction takes place through an over-the-counter sale.

The processes described in figure #2 illustrate a subtle yet important difference from prior art used in Internet commerce, in that Internet access is only required for the customer to choose which media content to purchase and to later retrieve on whatever computer the customer chooses. Internet access is not required during the recording of specific media content locations (URLs); they can be simply written down, picked out from a written menu after having seen the web dealers preview pages, or retrieved as a menu item from the local computer at the check out. Internet access is also not required during the recording of the specific access information, or during the retail transaction. While Internet Access during these processes may be used to facilitate the RPOS processes, it is not required. While the CARD holds some intrinsic value it does not hold any dollar amount information, account information, or other means of payment; the transaction is completed in person at the checkout.

Figure #3 uses a flow chart to illustrate an alternate use of the RPOS. The process again begins with Web Content Dealers. A Vending Machine Dealer purchases CARDS through normal product distribution channels. Customer purchases the CARD from the vending machine acquiring the ability to access the desired web content. This type of system is not capable of age verification as with over-the-counter sales. Again, the purpose of the CARD in this transaction is only to ensure that the user is in possession of it. The actual transaction takes place through a vending machine.

Figure #4 illustrates how CARD is used as an age verification system (Adult Check). The process begins with dealers of adult materials on the Internet. A retail establishment (such as video rental store, convenience store, bookstore, adult merchandiser, or other type of store) obtains CARDS through typical distribution channels. Customers purchase the CARD over the counter provided they can prove they are of legal age to do so. Customer physically transports the CARD to a location where customer has access to a computer that is capable of receiving Web content. The customer uses the CARD to obtain access to those specific materials the seller of the CARD intended.

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Figure #5 is a flow chart for programming the small security application (cache back/cookie free) that helps control security and anonymity.

Figure #6 shows some examples of recording devices that are used or could be modified for use as the media delivery method, access CARD, or to deliver the small cookie-free-cache-back application.

Figure #7 is an example of Font Fingerprinting where a font subset file must be delivered to the user.

Figure #8 is an example of Hidden Pixelization for Content Fingerprinting

Figure # 9 illustrates the similarities between the New Courier font and the Courier 10BT font.

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